CLAIMS

1.   A method for processing messages in a publish/subscribe message
dissemination system, wherein one or more alert conditions are defined for
the system, the method comprising the steps of:
    receiving a message;
    comparing the message with stored message subscriptions to determine
required dissemination of the message;
    generating an alert when an alert condition is satisfied;
    comparing the alert with stored alert subscriptions to determine
required dissemination of the alert; and
    controlling dissemination of the message and the alert in accordance
with their respective required dissemination.

2.   A method according to claim 1, wherein a matching component of the
message dissemination system performs the comparison of the message with
stored message subscriptions and determines when an alert condition is
satisfied, and wherein the generated alert is input to the same matching
component to perform the comparison of the alert with stored alert
subscriptions to determine required dissemination of the alert.

3.   A method according to claim 1 or claim 2, wherein rules for
generating and determining required dissemination of alerts are stored in
association with message topic information in a storage area of the
message dissemination system, and wherein the step of comparing the
generated alert with stored alert subscriptions comprises a matching
component of the message dissemination system using the stored rules to
determine whether the alerts match any stored alert subscriptions.

4.   A method according to claim 3, wherein the rules and subscriptions
for generating and determining required dissemination of alerts and
subscriptions for determining required dissemination of the received
message are retrieved from the storage area in a single scan of the
storage area.

5.   A method according to any one of the preceding claims, wherein the
alert comprises an identification of the original message which resulted
in the alert condition and an identification of the publisher and/or
message subscriber or message subscribers relevant to the alert condition.

6.   A method according to claim 5, wherein the alert further comprises an identification of the message topic of the original message.

7.   A method according to claim 5, wherein the alert further comprises an identification of the alert condition.

8.   A method according to any one of the preceding claims, wherein a first alert condition is receipt of a message for which message subscribers are to be charged for the dissemination of the message, and wherein the alert is forwarded to a subscribing charging process.

9.   A method according to any one of the preceding claims, wherein a second alert condition is receipt of a message for which auditing of message dissemination is required, and wherein the alert is forwarded to a subscribing audit process.

10.   A method according to any one of the preceding claims, wherein the step of comparing the message with stored message subscriptions includes comparing with stored authorization information.

11.   A method according to any one of the preceding claims, wherein message and alert subscriptions are stored in association with message topic information in a storage area of the message dissemination system, and wherein comparing the message with stored subscriptions comprises a matching component of the message dissemination system identifying matches between stored message topics and message topics of received messages.

12.   A method according to claim 1, wherein a first matching component of the message dissemination system performs the comparison of the message with stored message subscriptions and determines when an alert condition is satisfied, and wherein the generated alert is input to a second matching component of the message dissemination system to perform the comparison of the alert with stored alert subscriptions to determine required dissemination of the alert.

13.   A method according to claim 12, wherein the first and second matching components are located at different computers of a distributed message dissemination system.

14.   A data processing apparatus for providing a publish/subscribe message dissemination service on behalf of publisher and subscriber programs comprising:

means for receiving a published message from a publisher program;

means, responsive to identification of one or more message subscriber programs subscribing to messages of the type of the received message, for forwarding the received message to the one or more message subscriber programs; and

one or more matcher components for: comparing the received message with stored message subscriptions to identify the one or more message subscriber programs; generating an alert when an alert condition is satisfied; and comparing the generated alert with stored alert subscriptions to identify one or more subscriber programs subscribing to the alert; and

means for forwarding the alert to the one or more subscriber programs subscribing to the alert.

15.   A data processing apparatus according to claim 14, wherein the message and alert subscriptions are stored in data storage in association with message topic information, the one or more matcher components including means for retrieving stored subscription information by reference to message topic information of a received message.

16.   A data processing apparatus according to claim 15, wherein rules procedures for generating and determining required dissemination of alerts are stored in association with the message topic information, wherein the one or more matcher components are adapted to identify a relevant rules procedure by reference to the message topic information and to forward to the identified rules procedure:

a message subscription list;

a list of authorized recipients; and

an identification of one or more subscribers for alerts;

thereby to enable generation and determination of required dissemination of an alert.

17.   A data processing apparatus according to claim 14, wherein the one or more matcher components includes:

means for performing an authorization check to identify a subset of the identified one or more message subscriber programs which subset of programs is authorized to receive the message; and

means for generating an alert when the authorization check identifies an unauthorized message subscriber.

18.   A computer program product, comprising program code recorded on a recording medium, for controlling the operation of a data processing

apparatus on which the program code executes to perform a method of
generating and disseminating alerts in a publish/subscribe message
dissemination system, as claimed in any of claims 1 to 13.